

Perioperative Addiction

Ethan O. Bryson • Elizabeth A.M. Frost
Editors

Perioperative Addiction

Clinical Management of the Addicted Patient

Foreword by David L. Reich

 Springer

Editors

Ethan O. Bryson, MD
Associate Professor
Department of Anesthesiology
Department of Psychiatry
Mount Sinai School of Medicine
New York, NY, USA

Elizabeth A.M. Frost, MBChB, DRCOG
Professor
Department of Anesthesiology
Mount Sinai School of Medicine
New York, NY, USA

ISBN 978-1-4614-0169-8 e-ISBN 978-1-4614-0170-4
DOI 10.1007/978-1-4614-0170-4
Springer New York Dordrecht Heidelberg London

Library of Congress Control Number: 2011939085

© Springer Science+Business Media, LLC 2012

All rights reserved. This work may not be translated or copied in whole or in part without the written permission of the publisher (Springer Science+Business Media, LLC, 233 Spring Street, New York, NY 10013, USA), except for brief excerpts in connection with reviews or scholarly analysis. Use in connection with any form of information storage and retrieval, electronic adaptation, computer software, or by similar or dissimilar methodology now known or hereafter developed is forbidden.

The use in this publication of trade names, trademarks, service marks, and similar terms, even if they are not identified as such, is not to be taken as an expression of opinion as to whether or not they are subject to proprietary rights.

While the advice and information in this book are believed to be true and accurate at the date of going to press, neither the authors nor the editors nor the publisher can accept any legal responsibility for any errors or omissions that may be made. The publisher makes no warranty, express or implied, with respect to the material contained herein.

Printed on acid-free paper

Springer is part of Springer Science+Business Media (www.springer.com)

*For my wife, Amity; our son, Brady;
and my mom, Linda. With your love
and support anything is possible.*

–Ethan O. Bryson

*Dedicated to the nine men in my life –
Garrett, Ross, Christopher, Neil, Christian,
Adam, Ryan, Jack, and Ryder –
and to the 5 women who manage them...
Victoria, Tara, Kayla, Dawn and Laura.*

–Elizabeth A.M. Frost

Foreword

One of the greatest clinical challenges for any anesthesia trainee or practitioner is his/her first experience with a patient with a substance use disorder, whether it be acute, chronic, or iatrogenic. With the ready availability of drugs (over the counter, prescription, and illicitly obtained), complex pharmacology is already present prior to introducing anesthetic drugs. Tolerance and untoward drug interactions set the stage for unpredictable and adverse outcomes.

It is extremely difficult for us to accept the fact that some of our colleagues may also have substance use disorder – a sometimes-fatal disease that harms patients and destroys lives and careers. We often respond with the classic Kübler-Ross grief cycle and then forget quickly when a colleague suddenly disappears to undergo inpatient treatment, is quietly dismissed, or worse still, is found dead. With few forums to discuss addiction and an obligation to protect confidentiality, we create a collective amnesia. We take little or no action to prevent the next occurrence.

Even leaders of national societies, large healthcare institutions, academic departments, and group practices find it agonizing to develop strategies and policies for education, prevention, detection, discipline, treatment, and rehabilitation of the addicted professional. Our own departmental experience over my 26-year tenure has included deaths, careers cut short, and rehabilitations – both successful and failed. The strategy of selective rehabilitation is opposed by many who argue that the risks outweigh the benefits. There are few data to refute that position, despite notable successes.

However, we are gathering information regarding the causes and thus possible treatment or reversal of drug abuse. While much of the information is incomplete, the framework is being developed for a better understanding of the complex nature of addiction. The announcement this year (2011) that a vaccine to treat abuse is available for trial is encouraging.

Drs. Bryson and Frost have assembled a superb group of authors to address these difficult situations. They are to be commended for exploring the existing literature and bringing the experts together to create a cohesive text.

Shortly prior to becoming a United States Supreme Court Justice, Louis Brandeis wrote, “Publicity is justly commended as a remedy for social and industrial diseases. Sunlight is said to be the best of disinfectants; electric light the most efficient policeman.”¹ It is my hope that this text will spur us to deal openly and more effectively with the challenges of anesthesia professionals caring for all sufferers from substance use disorder.

New York, NY

David L. Reich

¹ Brandeis LD: “Other People’s Money” (Chap. 5: What Publicity Can Do), 1914, Public Domain. <http://www.law.louisville.edu/library/collections/brandeis/node/196> (accessed January 3, 2011).

Preface

Almost since the beginning of time, man has been intrigued and often overcome by the consumption of substances that alter the perception of everyday life. Well-intended groups, religious organizations, and governments, among others, have struggled with means to legislate and control the ensuing problems with varying success. Yet, drug abuse has continued to escalate, albeit in an ever-changing form, and battle lines have been drawn. This year (2010) the size of one American tobacco company's annual sales has topped \$66 billion, which is twice the gross domestic profit of a country such as Uruguay. The company is suing Uruguay (and Brazil) for unspecified damages from lost profit, as these countries have increased warning labels on cigarette packages. Indonesia depends on tobacco jobs and tax revenue as well as payment from tobacco companies for survival and thus has not joined the other 171 countries in the WHO Tobacco Free Initiative. In other words, companies can hold entire countries hostage. However, not only taxes from tobacco sustain governments but also taxes from alcohol, which have fueled more than one war, and with the newly expanded licensing of medical marihuana, undoubtedly even more revenue will flow into government pockets and quickly become essential for running diverse programs.

Anesthesiologists are not immune from addiction but may even be subjected to an environmental hazard from ingestion of trace amounts of substances that later lead to addiction. Alternatively, as has been considered, the ready availability and access to controlled substances may make anesthesia an attractive profession for some individuals and thus foster their addiction. Certainly, it is only recently (last 100 years or so) that overindulgence in narcotics and alcohol has been considered an unworthy trait in physicians. Prior to that, addiction was romanticized by authors and poets and readily adopted by many famous practitioners of medicine. Indeed, several of our most important discoveries in anesthesia evolved from playful experimentation with drugs.

Of course, as anesthesiologists, we often encounter patients who are acutely or chronically abusing drugs, sometimes of multiple origins. These agents not only alter the physiology of the body but also interact with anesthetic agents to cause several, often unpredictable, changes in systemic parameters.

In this text, we have gathered together practitioners with a special interest in the effects of abused substances in all the various manifestations. We realize that this is a rapidly changing and emerging topic, and one that is unlikely to disappear in the near future (the history is too long). We still have much to learn and a long road to travel.

New York, NY

Ethan O. Bryson
Elizabeth A.M. Frost

Contents

Part I Background

- | | |
|---|-----------|
| 1 A History of Addiction in Medical Personnel..... | 3 |
| Elizabeth A.M. Frost | |
| 2 The Genetic Basis of Addiction..... | 35 |
| Chad Epps and Elizabeth Laura Wright | |
| 3 Pharmacologic Treatments for Addiction..... | 51 |
| Clifford Gevirtz, Ethan O. Bryson, and Elizabeth A.M. Frost | |

Part II Specific Drugs

- | | |
|---|------------|
| 4 The Anesthetic Implications of Opioid Addiction..... | 73 |
| Michael Lewis and Fouad Souki | |
| 5 The Cocaine-Addicted Patient | 95 |
| Alan D. Kaye and Julia L. Weinkauff | |
| 6 Club Drugs..... | 111 |
| Samuel DeMaria | |
| 7 Anesthesia and Alcohol Addiction..... | 129 |
| Andrew Schwartz and David Knez | |
| 8 Tobacco, the Smoking Gun? | 143 |
| Elizabeth A.M. Frost | |
| 9 Marijuana, Nitrous Oxide, and Other Inhaled Drugs..... | 163 |
| Ethan O. Bryson and Elizabeth A.M. Frost | |
| 10 Propofol Abuse | 179 |
| Elizabeth A.M. Frost and Ethan O. Bryson | |

Part III Specific Populations

**11 Drugs, Alcohol, and Pregnant Women:
Anesthetic Implications for Mother and Newborn** 191
Migdalia Saloum and Jonathan N. Epstein

**12 Prescription Drugs: Implications for the Chronic
Pain Patient**..... 213
Amy S. Aloysi and Ethan O. Bryson

13 The Addicted Adolescent Patient 225
Corey Scher, Ethan O. Bryson, and Elizabeth A.M. Frost

14 The Addicted Geriatric Patient 239
Sherry Cummings and R. Lyle Cooper

15 The Drug-Seeking Health-Care Professional 253
Dirk Wales and Ethan O. Bryson

**16 Non-narcotic Anesthetic Options for the Patient
in Recovery from Substance Abuse**..... 263
Heather Hamza

Index..... 283

Contributors

Amy S. Aloysi, MD Department of Psychiatry, Mount Sinai School of Medicine, New York, NY, USA

Ethan O. Bryson, MD Department of Anesthesiology and Department of Psychiatry, Mount Sinai School of Medicine, New York, NY, USA

R. Lyle Cooper, PhD, LCSW College of Social Work, University of Tennessee, Nashville, TN, USA

Sherry Cummings, MSW, PhD College of Social Work, University of Tennessee, Nashville, TN, USA

Samuel DeMaria, Jr., MD Department of Anesthesiology, Mount Sinai School of Medicine, New York, NY, USA

Chad Epps, MD Department of Anesthesiology, University of Alabama at Birmingham, Birmingham, AL, USA

Department of Clinical and Diagnostic Sciences, University of Alabama at Birmingham, Birmingham, AL, USA

Jonathan N. Epstein, MD College of Physicians and Surgeons, Columbia University, New York, NY, USA

Department of Anesthesiology, St. Luke's Roosevelt Hospital, New York, NY, USA

Elizabeth A.M. Frost, MBCChB, DRCOG Department of Anesthesiology, Mount Sinai School of Medicine, New York, NY, USA

Clifford Gevirtz, MD, MPH Somnia Pain Management, New Rochelle, NY, USA

Heather Hamza, MS, CRNA Department of Anesthesiology, Los Angeles County Medical Center, University of Southern California, Los Angeles, CA, USA

Michelle M. Jacobs, PhD Department of Psychiatry, Mount Sinai School of Medicine, New York, NY, USA

Department of Pharmacology and Systems Therapeutics, Mount Sinai School of Medicine, New York, NY, USA

Alan D. Kaye, MD, PhD Department of Anesthesiology, LSU School of Medicine, Louisiana State University, New Orleans, LA, USA

David Knez, DO Pittsburgh, PA, USA

Michael Lewis, MD Department of Anesthesiology, University of Miami Miller School of Medicine, Miami, FL, USA

Migdalia Saloum, MD Department of Anesthesiology, St. Luke's Roosevelt Hospital, New York, NY, USA

Corey Scher, MD New York University School of Medicine, New York, NY, USA

Andrew Schwartz, MD Department of Anesthesiology, Mount Sinai School of Medicine, New York, NY, USA

Fouad Souki, MD Department of Anesthesiology, Jackson Memorial Hospital, Miami, FL, USA

Dirk Wales Wearing Masks Series, Rainbow Productions, Chicago, IL, USA

Julia L. Weinkauff, MD Department of Anesthesiology, Mount Sinai School of Medicine, New York, NY, USA

Elizabeth Laura Wright, PhDc, MNA, CRNA Department of Clinical and Diagnostic Sciences, University of Alabama at Birmingham, Birmingham, AL, USA